Matching

Jan-Wouter Zwart

In Chomsky's *Minimalist Program* (Chomsky 1992), formal licensing operations are defined as feature matching operations.[1] Elements are inserted in fully inflected form, carrying abstract morphological features associated with the inflection. These features have counterparts represented in functional heads. At some point in the derivation, the inflected elements raise to a position close to these functional heads, so that the features can be checked off against each other.

The positions involved in the feature matching operation are the specifier position and the head position of functional projections. Thus, NPs marked with Nominative Case move to the Spec,AgrS to match the feature associated with Nominative Case with the relevant feature in AgrS (by a mechanism of *specifier-head agreement* or *SHAG*). Similarly, inflected verbs move to the head of AgrSP to match their person/number features with the corresponding features, which are also represented in AgrS.

This feature matching approach to formal licensing offers an explanation for the movement phenomena that appear to be associated with inflectional morphology in a variety of languages. It is assumed that movement is triggered by only one type of requirement: the requirement that abstract morphological features be checked. It is also assumed that this checking takes place in specifier and head positions of functional projections only. Therefore, inflected elements *have* to move in order to get their features checked. When the verb and the NP move in overt syntax and target the same functional projection, an adjacency effect shows up (for example, between the subject and the verb in subject initial main clauses in Dutch).[2]

In general, structural Case assignment phenomena can be reformulated in this framework without great difficulty. There is, however, one class of phenomena that seems hard to reconcile with the basic assumptions outlined above. These are the phenomena involving structural Case on a predicate nominal.

Predicate nominals and their subjects often *agree* in Case.[3] Yet, in a language like Dutch, where the feature checking involves overt movement of NPs (see note 1), only one of the two elements, either the subject or the predicate nominal, moves to the position in which the Case-associated features are formally licensed. As demonstrated in Zwart (1992a), the other element is remarkably immobile.

[1] Thanks are due to Eric Hoekstra, Jan Koster, and an anonymous reviewer for this Yearbook, for comments on an earlier version of this paper.

[2] The relation between inflectional morphology and movement is obscured by the fact that in many languages the movement and the formal licensing take place covertly, i.e. *after* the point in the derivation where the instructions to the motor-articulatory system are given. See Chomsky (1992).

[3] In this paper, I will not be concerned with languages in which the predicate nominals do not agree in Case with some other NP, but carry a special ('inherent') Case (e.g. Russian).

This suggests that in these cases of Case agreement one element can 'pick up the Case' for both of the elements. In other words, if one of the elements has its features checked, the features of both of the elements are checked. Clearly, this calls for an extension of the mechanism of Case checking in SHAG configurations.

In this paper, I will propose a decomposition of Spec-Head agreement into two processes: feature sharing between a functional head and its immediate projection, and matching of features between sisters. Case agreement will then turn out to be an instance of the latter. It is crucial in this approach to the problem that the two-level X-bar theory of Chomsky (1986) be replaced by a one-level X-bar theory as proposed in Hoekstra (1991).

1. Predicate Nominals

Initial examples of Case agreement are given in (1), from Latin:

(1) a. Belgae sunt fortissimi
Belgians-masc.pl.nom are-3pl toughest-masc.pl.nom
"The Belgians are the toughest."

b. Dixit Belgas esse fortissimos
said-3sg Belgians-masc.pl.acc be-inf toughest-masc.pl.acc
"He said that the Belgians are the toughest."

In (1a), the predicate adjective *fortissimi* 'toughest' agrees in gender, number and Case with the subject, *Belgae* 'the Belgians'. It is the Case agreement we are interested in here. In (1b), a so-called *Accusativus Cum Infinitivo* construction, the subject *Belgas* 'the Belgians' is in the Accusative, and again the predicate adjective, *fortissimos* 'thoughest' agrees in gender, number and Case with the subject.

Following Hoekstra & Mulder (1990:33), I will assume that copular constructions like (1) contain a *Small Clause*, with a structure as illustrated in (2).

(2) $[_{SC}$ NP XP]

In (2), *NP* is the *subject* of the Small Clause and *XP* is the Small Clause *predicate*.

The Small Clause is generated as a complement to the copular verb *esse* 'to be' in (1). The subject of the Small Clause moves out of the VP to a position in the functional domain, in order to get its Case features checked. In (1a), the subject moves to Spec,AgrS, and in (1b), to Spec,AgrO. The Small Clause predicate remains in its original position.

As shown by Moro (1990), copular constructions in general allow two options: raising of the subject, as in (1), and raising of the predicate, as in (3). In the latter case, the subject remains in its original position. Case agreement still obtains:

(3) Fortissimi sunt Belgae
toughest-masc.pl.nom are-3pl Belgians-masc.pl.nom
"The toughest are the Belgians."

Moro (1990) proposes that in this case, not the subject but the predicate of the Small Clause moves to the position in which Nominative Case is checked.

Hoekstra & Mulder (1990) apply this analysis to Locative Inversion constructions, as in (4).

(4) a. A horse ran out of the barn.
b. Out of the barn ran a horse.

Hoekstra & Mulder argue that the motional verb *run* in (4) is an unaccusative verb with a Small Clause complement. *A horse* is the subject of this Small Clause, and *out of the barn* is the Small Clause predicate. Again, both the subject and the predicate can move out in order to get the Case features checked.

There are two obvious problems with this analysis (which I adopt).

First, it is unclear by which mechanism the Case features of the element remaining inside the Small Clause are checked. In (1) and (4a), the subject moves to the specifier position of a functional head, and its Case features are checked under Spec-Head agreement. But if the Small Clause predicate agrees with the subject, it has Case features as well. It is not clear how these are checked. Similarly, *mutatis mutandis*, for the subject in (3) and (4b).

Hoekstra & Mulder (1990:29) argue that in each of these cases, the Case of the element in postcopular position is licensed by the trace of the element that has moved out of the Small Clause, as an instance of Spec-Head agreement. But this cannot be correct, since the subject and the predicate of the Small Clause are both maximal projections. Moreover, if we adopt the Small Clause structure in (2), the subject and the predicate are in a sisterhood configuration, not in a Spec-Head configuration.[4]

Second, the analysis of Locative Inversion is acceptable in a Case assignment approach, but not in a feature checking approach. PPs do not have Case features, so it is unclear how moving the Small Clause predicate to Spec,AgrS in Locative Inversion constructions helps checking the Case features of the subject left behind in the Small Clause.

At this point, one might consider dropping the Hoekstra & Mulder analysis of Case licensing on predicate nominals altogether. However, Zwart (1992a) notices that in Locative Inversion constructions in Dutch, the Small Clause subject is remarkably immobile. The relevant facts are given in (5).

[4] The Small Clause structure in (2) is also adopted in Hoekstra & Mulder (1990:3). An alternative structure would involve an additional head of the Small Clause, so that the Small Clause subject is in the Specifier position of this head, and the Small Clause predicate in the complement position of the head.

(5) a. dat in de kast gisteren **een lijk** zat
that in the closet yesterday a body sat
"that there was a body in the closet yesterday"

b. * dat in de kast **een lijk** gisteren zat
that in the closet a body yesterday sat

Zwart (1992a) argues that the constructions in (5) are Locative Inversion constructions. This means that the PP *in de kast* 'in the closet' originates as a Small Clause predicate and is raised to Spec,AgrS. The subject of the Small Clause is *een lijk* 'a body'. (5b) shows that this Small Clause subject may not be separated from the verb, i.e. moved out of the Small Clause across an adverb.[5]

Something must be forcing the Small Clause subject to remain in its original position when the Small Clause predicate has moved to Spec,AgrS. This is understandable if the Small Clause subject is dependent on the trace of the raised predicate for the licensing of its Case features.

I will therefore assume that something like indirect Case feature checking exists in predicate nominal constructions and the copular constructions identified in Hoekstra & Mulder (1990). This leaves us with the two problems mentioned above:

1. Why is a Spec-Head configuration required for direct Case checking, but not for indirect Case checking?
2. How can a PP be an intermediary for Case checking of a Small Clause subject?

To answer these questions, it is necessary to reconsider the notion of Spec-Head agreement.

2. What's Special About Spec?

We have seen that in the Minimalist Approach movements are triggered by the requirement that morphological features be checked in the functional domain. If both NP-movement and Verb-movement (to the same projection) take place in overt syntax, an adjacency effect shows up. For instance, nothing may intervene between the subject and the verb in subject initial main clauses in Dutch.

(6) Jan (*gisteren) at een appel
John yesterday ate an apple

[5] The ungrammaticality of (5b) is not due to the fact that the Small Clause subject is an indefinite NP, because an indefinite Small Clause subject may be moved out of the Small Clause when the Small Clause predicate is *in situ*, as in *dat er een lijk gisteren in de kast zat* '(lit.) that there a body yesterday in the closet sat'.

In (6), both the subject *Jan* and the verb *at* 'ate' are in a derived position. In accordance with the Minimalist Program, we assume that the subject and the verb have moved for reasons of feature checking, to Spec,AgrS and AgrS, respectively.[6] As (6) shows, feature checking will fail when the subject moves to a position adjoined to AgrSP rather than to Spec,AgrS. The question arises what makes Spec so special.[7]

The special status of specifiers might be explained by a minimality requirement on licensing: nothing may intervene between two elements in a licensing relation.[8] However, minimality requirements in their turn should follow from general principles of economy (Chomsky 1992).

To achieve such a result, I will argue that agreement is really a sisterhood relation, and that the sister to a specifier carries the features relevant for the feature checking of the moved NP, whereas the sister to an adjunct carries no such features. Therefore, moving the NP to an adjunct position will leave its features unchecked.

This proposal is based on the theory of Generalized Transformations of Chomsky (1992).

3. Generalized Transformations

In the theory of Generalized Transformations, tree structure are built up by combining phrase markers. Phrase markers are combined by expanding a 'matrix' phrase marker in order to make room for a sister (the 'constituent' phrase marker). The expansion takes place by projecting one X-bar level on top of the matrix phrase marker and adding an empty slot as a sister to the matrix phrase marker (and as a daughter to the projection of the matrix phrase marker). This empty slot is filled by the constituent phrase marker. Through a repetition of this process, complete X-bar trees are formed.

The constituent phrase marker may originate as an element independent from the matrix phrase marker. In that case, the Generalized Transformation is a *binary* operation. The constituent phrase marker may also originate within the matrix phrase marker. In that case, the Generalized Transformation is a *singulary* operation. Insertion of a complement is a typical binary operation. Movement for feature licensing purposes is a typical singulary operation.

Generalized Transformations invariably involve a juxtaposition of sisters. The projection joining the sisters is an unavoidable by-product of this juxtaposition. Therefore, we may consider the sister-relation to be a primitive relation. *Whenever elements are combined, they are combined as sisters.*

[6] This analysis is extensively motivated in Zwart (1992b, to appear).

[7] Kayne (1987) argues that agreement between adjuncts and heads takes place in French past participle agreement constructions involving wh-movement. I will not discuss that possibility here. For critique, see Branigan (1991).

[8] Notice that this minimality requirement would be rigid, rather than relativized (cf. Rizzi 1990).

It follows from the theory of Generalized Transformations that complements are always sisters to heads. Thus, the sisterhood condition on theta-role assignment of Chomsky (1986) need not be stated independently. The question now arises whether the special status of specifiers can be explained in terms of the theory of Generalized Transformations as well. For this, we need to take a look at X-bar theory.

4. X-Bar Theory

In the standard X-bar theory of Chomsky (1986), 'specifier' can be defined in terms of the X-bar level of its sister: a specifier is a sister to an X'. However, the status of X-bar theory becomes questionable now that we have another structure building mechanism in the theory of Generalized Transformations.

It seems that X-bar theory adds just one element to the theory of Generalized Transformations: the distinction between X' and XP.

Combining two sisters invariably yields a projection. How do we know what bar-level this projection will have? The Generalized Transformation mechanism doesn't tell us anything about that. It seems that an independent X-bar theory is needed to make sure that the projection on top of an X° matrix phrase marker will be an X', and that the projection on top of an X' matrix phrase marker will be an XP.

However, if X-bar theory serves only this one purpose, namely to distinguish the X' level from the XP level, one may wonder whether the X'/XP distinction is worth that much.

It has been argued several times, most recently in Hoekstra (1991), that the familiar two level X-bar theory of Chomsky (1986), involving (besides heads) X' and XP, can be replaced by a one level X-bar theory, involving only heads an XPs (cf. also Stuurman 1985).[9] If this is correct, the problem of what bar-level projections Generalized Transformations yield disappears. They invariably yield XPs.[10]

If Generalized Transformations invariably yield XPs, the special status of the specifier cannot be derived from the rules of X-bar theory. Specifiers are sisters of XP, just like adjuncts. Therefore, something else is needed to distinguish specifiers from adjuncts.

Notice that there is an important difference between the sister of a specifier and the sister of an adjunct. The sister of a specifier is the first XP projection of X°. The first projection on top of X° is created whenever we want X° to be part of a larger structure. Without this first XP, X° could never have a complement. In contrast, the XPs on top of the first XP are not needed for the first XP to be integrated into a larger structure. The first XP can be the constituent phrase marker for a Generalized Transformation as it is.

[9] I refer to the works quoted, for argumentation.

[10] I am leaving head movement out of the discussion for reasons of space.

Thus, the first XP is indispensable, whereas the XPs on top of the first XP are additional. In accordance with this, the first XP is always the result of a binary operation, whereas the additional XPs are typically the result of a singulary operation (such as movement to Spec,AgrS for feature licensing).[11]

Let us cast this distinction into the following definitions.[12]

(7) For α, ß where α dominates ß:

(7a) DAUGHTER
ß is a Daughter of α iff (i) for $\alpha = X^n$, $\beta = X^{n-1}$ ($n \geq 1$), and
(ii) there is no γ, $\gamma = X^n$, such that γ dominates β and α dominates γ

(7b) PROJECTION
α is a Projection of ß iff ß is a Daughter of α

(7c) SEGMENT
α is a Segment of ß iff (i) for $\alpha = X^n$, ß = X^n, and
(ii) there is no γ, $\gamma \neq X^n$, such that γ dominates β and α dominates γ

(7d) NUMBERING CONVENTION
$XP = X^1$
$X = X^\circ$

We can now say that binary operations yield Projections, whereas singulary operations yield Segments.[13] Consequently, the difference between specifiers and adjuncts can be formulated as follows.

(8a) SPECIFIER
A Specifier is a sister of a Projection

(8b) ADJUNCT
An Adjunct is a sister of a Segment

[11] In fact, functional projections must be built up to include specifiers before entering into other binary transformations, but this is a necessary result of Strict Cyclicity, obscuring the distinction between Projections and Segments proposed in the text (Chomsky 1992).

[12] To avoid possible confusion with other technical usage of the terms 'daughter', 'projection' and 'segment' I will capitalize these terms when intended in the sense defined here.

[13] It is possible that adjuncts like sentence adverbials are integrated into a larger structure by a binary operation targeting a (functional) XP. In other words, these adjuncts may be base-generated in the functional domain instead of moved there from a position in the thematic domain. The definitions in the text ensure that maximal projections created in this way are Segments rather than Projections. The crucial thing is that a Projection is something without which heads could not be integrated into a larger structure.

The minimality effect on formal licensing (the fact that adjuncts cannot enter into SHAG, cf. (6)) now follows if the Specifier-Head relation is decomposed into two relations: a sisterhood relation between an NP and an XP and a daughterhood relation between X° and the same XP. The latter relation only occurs when the XP is a Projection. Therefore, an NP in an adjunct position cannot enter into an agreement relations with a head: the sister of an adjunct is not a Projection.

5. Feature Matching

We have now reformulated Spec-Head agreement as involving an intermediary XP node. We have also made a distinction between two types of XPs: Projections and Segments. The former are basic, the latter additional. The intermediary XP node has to be a Projection. We may wonder why.

Recall that Projections are projections without which heads cannot be integrated into a larger structure. In other words, heads cannot exist without a Projection, but they can without Segments. Suppose that for this reason heads and Projections are indistinguishable as far as their feature content is concerned, while Segments share nothing but categorial features with their heads. This implies that when AgrS, for instance, is expanded into AgrSP as a part of the Generalized Transformation joining AgrS and TP, AgrSP will carry the same features as AgrS. In contrast, the AgrSP Segment created to accomodate the subject NP when it moves up front for feature licensing, will not carry these features.

In Spec-Head agreement operations, two features have to be licensed. First, the subject NP moving to Spec,AgrS carries a feature to be checked off against the corresponding feature of AgrS. Second, AgrS carries a feature to be checked off against the corresponding feature of the element in Spec,AgrS. Thus, the NP and the AgrS are each both licenser and licensee. This illustrates that Spec-Head agreement is an operation of feature *matching*.

Following Chomsky (1992), I will call a feature carried by X° which has to be matched with a feature of a raised NP *N-feature*. In addition, X° has a feature to be matched with a feature of the verb (after head movement of the verb to a functional head), the *V-feature*. Now we can say that the N-feature and the V-feature are present in both X° and its Projection XP (but not in its Segment XP).

Suppose next that when the V-feature of AgrS and the corresponding feature of the verb that has moved to AgrS match, the V-feature of AgrSP is also automatically licensed (in fact, eliminated, following Chomsky (1992)). Similarly, we may assume that the N-feature of AgrS can be eliminated when the N-feature of AgrSP matches with the corresponding feature of the NP in Spec,AgrS.

I assume that this is what happens when an XP raises for reasons of formal licensing. It moves to a position as close as possible to a maximal projection carrying a matching feature (hence to a Projection of the head carrying this feature).[14] The matching then takes place between sisters. When the N-feature of

[14] An XP cannot be adjoined to a head because of the *Like Attracts Like Constraint* (Baltin 1982).

a Projection is licensed, the N-feature of the head of this Projection is automatically licensed as well.

If this is correct, *Spec-Head agreement reduces to feature matching between sisters*.[15]

With this in mind, let us return to the problems associated with Case agreement.

6. Case Agreement

We have assumed, following Hoekstra & Mulder (1990), that predicate nominals are Small Clause predicates, and that their Case is licensed through the trace of the Small Clause subject which raises to a specifier position in the functional domain. The problem with this approach was that Case is checked in a Spec-Head relation in the functional domain, but in a sisterhood relation in the Small Clause. This discrepancy called for an explanation.

However, we have seen in the last section that Spec-Head agreement can be reduced to feature matching between sisters. The Case feature of the subject has to match the N-feature of its sister, AgrSP. Similarly, the Case feature of the Small Clause predicate has to match the Case feature of the trace of the raised Small Clause subject. This suggests that Case licensing invariably involves a sisterhood relation.

However, there is a slight theory internal problem with the idea that the trace of the raised element licenses the Case of the *in situ* element. The problem is that Case licensing consists is feature licensing, more exactly, in eliminating those features that are not relevant outside the syntactic component (Chomsky 1992). It is unclear how eliminating such a feature 'upstairs' helps licensing a similar feature 'downstairs'.

To solve this problem we have to define sisterhood transitively:

(9) SISTER

α is a sister of ß iff	(i)	α and ß c-command[16] each other, or
	(ii)	α is a sister of γ, and γ is a sister of ß

(9) expresses that a sister of a sister of *x* is a sister of *x*. In ternary branching structures, this is obvious. In binary branching structures, the transitivity of sisterhood only applies when γ is a chain and α and β are both sisters of an element of γ. In that case, γ will have two sisters, one from the point of view of the foot of the chain, and another one from the point of view of the head of the chain. By (9ii), these two sisters of γ will be sisters of each other as well.

[15] It is easy to see that head-head agreement also reduces to feature matching between sisters, assuming that head movement is always adjunction, resulting in a pair of head sisters.

[16] 'C-command' is understood in the classic sense. In our definitions: α c-commands β iff the first XP dominating α also dominates β.

Thus, by (9), raising of the Small Clause subject to Spec,AgrS turns the Small Clause predicate into a sister of the AgrSP Projection. This movement creates a chain γ, with the raised Small Clause subject as its head and a trace as its foot. The AgrSP Projection and the *in situ* Small Clause predicate are sisters of the head and the foot of γ, respectively.[17]

Hence, the raising of the subject turns both the subject and the Small Clause predicate into a sister of AgrSP. The Case feature of the predicate nominal can then be licensed through feature matching under sisterhood with AgrSP.[18]

We can now express the following condition on feature matching:

(10) FEATURE MATCHING
Feature matching between α and ß takes place only if α and ß are sisters

Since Case features are licensed (eliminated) through matching, (10) includes the generalization that Case licensing invariably involves a sisterhood relation. If all licensing operations are local feature matching operations (Chomsky 1992), (10) may be a core principle of syntax.

7. Locative Inversion

If we have been on the right track so far, we should now be able to solve the problems associated with Locative Inversion. In the Hoekstra & Mulder (1990) analysis, the PP, a Small Clause predicate, raises to Spec,AgrS to pick up the Case of the Small Clause subject. The Small Clause subject is then assigned its Case through the trace of the raised predicate. This is problematic in a Case checking/matching account, because the predicate PP doesn't have Case features. Neither, then, has its trace, so it is unclear how raising the Small Clause predicate could assist in the Case feature checking of the Small Clause subject.

Given the definitions of sisterhood and feature matching proposed in the last sections, this problem disappears completely. After the predicate raising, the Small Clause subject is a sister to the trace of the raised predicate. The raised predicate itself is a sister to the AgrSP Projection. Recall that the N-feature of AgrS is also present in the AgrSP Projection. The raised predicate and its trace constitute a chain with two sisters: the AgrSP Projection and the Small Clause subject. By (9), these two sisters are also sisters of each other. By (10), then, the

[17] Things are slightly more complicated when it turns out that the predicate nominal is not a Small Clause predicate, but the complement of the head of a Small Clause (cf. Den Dikken 1992). In that case, the predicate nominal is the sister of the head of the Small Clause, but not of the Small Clause subject. Perhaps a sister of X° is also a sister of the XP Projection. This would have as a consequence that a complement of X need never move to Spec,X, since the movement would not change its status, and therefore be ruled out by economy. I will leave this for further study.

[18] Notice that this is one case where uniqueness of licensing (Koster 1987, Hoekstra 1991) doesn't apply.

Case feature of the Small Clause subject can be licensed through matching with the N-feature of the AgrSP Projection.

A crucial difference with the Hoekstra & Mulder approach is this. In the Hoekstra & Mulder approach, the Small Clause subject is licensed indirectly, through the trace of the raised predicate. In the present approach, the Small Clause subject is licensed directly as a sister of the AgrSP Projection. However, the raising of the predicate is a necessary step in this process, because without this raising the Small Clause subject could never be a sister of the AgrSP Projection (unless it is itself raised).

This difference yields an important advantage of the present approach over the Hoekstra & Mulder approach. Recall that in the Minimalist Program all movements are triggered by the requirement that morphological features be checked. Raising of a Small Clause subject to the Spec,AgrS is perfectly understandable from this point of view. However, raising of a Small Clause predicate, especially a PP, is anomalous within the Minimalist Program. A PP lacks the morphological features corresponding to the N-feature of AgrS. Therefore, in Locative Inversion constructions the Small Clause subject cannot be licensed through the trace of the raised predicate, because there is no trigger for the predicate raising to begin with.

In the present approach this problem does not arise. The features of the Small Clause subject are not licensed through the trace of the raised predicate, but by feature matching with the AgrSP Projection directly. By (10), feature matching invariably involves sisters. There are two ways for a Small Clause subject to become a sister of the AgrSP Projection. One way is by raising the subject to the Spec,AgrS position. Another way is by raising its sister, the Small Clause predicate, to the Spec,AgrS position. The two ways are equally costly, since in both cases it takes only one step to bring the Small Clause subject in the required sisterhood configuration with the AgrSP Projection.[19]

8. Conclusion

Case licensing is feature matching between sisters. Sisterhood is defined transitively. This makes it possible for Small Clause elements, such as predicate nominals, to license their Case features *in situ*, provided their sister has been raised to the relevant position in the functional domain.

I have made two assumptions, in addition to the assumptions underlying the Minimalist Program of Chomsky (1992). First, I have adopted a one-level X-bar theory, following Hoekstra (1991). Second, I have assumed that the feature content of the first XP dominating a head (the Projection) is indistinguishable

[19] Another serious problem of the Hoekstra & Mulder approach remains, however, since the raising of the predicate violates the economy related principle of Greed (Chomsky 1992). According to this principle, elements may not raise to assist in the licensing of features of other elements. This problem will have to await further study.

from the feature content of the head itself. Both assumptions can be made to follow from the theory of Generalized Transformations of Chomsky (1992).

The analysis proposed has an important consequence. It now follows from the assumption that formal licensing operations take place in the functional domain, that Case cannot be licensed through head government. This follows from the fact that an NP in the specifier position of a complement of X, is not a sister to X or its XP Projection. Similarly, given the assumptions made here, it is no longer necessary to stipulate that formal licensing takes place under Spec-Head agreement. Since it can be argued that all syntactic relations are sisterhood relations, the fact that formal licensing invariably involves specifiers follows from the basic assumption that formal licensing takes place in the functional domain.

References

Baltin, M. (1982) "A Landing Site Theory of Movement Rules". *Linguistic Inquiry* 13, 1-38.

Branigan, Ph. (1991) "Variables, Case and Economy". *MIT Working Papers in Linguistics* 15, 1-29.

Chomsky, N. (1986) *Barriers*. MIT Press, Cambridge, Massachusetts.

Chomsky, N. (1992) "A Minimalist Program for Linguistic Theory". *MIT Occasional Papers in Linguistics* 1.

den Dikken, M. (1992) *Particles.* PhD dissertation, University of Leiden.

Hoekstra, E. (1991) *Licensing Conditions on Phrase Structure*. PhD dissertation, University of Groningen. Groningen Dissertations in Linguistics 2.

Hoekstra, T. & R. Mulder (1990) "Unergatives as Copular Verbs: Locational and Existential Predication. *The Linguistic Review* 7, 1-79.

Kayne, R.S. (1987) "Facets of Romance Past Participle Agreement". In P. Benincà, ed., *Dialect Variation and the Theory of Grammar*, Foris, Dordrecht.

Koster, J. (1987) *Domains and Dynasties*. Foris, Dordrecht.

Moro, A. (1990) "*There* as a Raised Predicate". Paper presented at GLOW, Cambridge.

Rizzi, L. (1990) *Relativized Minimality.* MIT Press, Cambridge Mass.

Stuurman, F. (1985) *X-bar and X-plain: A Study of X-bar Theories of the Phrase Structure Component.* PhD dissertation, University of Utrecht.

Zwart, C.J.W. (1992a) "Dutch Expletives and Small Clause Predicate Raising". To appear in *Proceedings of NELS 22*.

Zwart, C.J.W. (1992b) "Verb Movement and Complementizer Agreement". Paper presented at the GLOW Colloquium, Lisbon, April 15.

Zwart, C.J.W. (to appear) *Dutch Syntax: A Minimalist Approach.* PhD dissertation, University of Groningen.

Groningen, September 3, 1992
[revised Election Day, 1992]